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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/606,587 | 06/26/2003 | Toru Asano | AUS920020590US1 | 5088 |
| 7590 | 06/29/2004 | | EXAMINER | |
| Gregory W. Carr 670 Founders Square 900 Jackson Street Dallas, TX 75202 | | | TRAN, MICHAEL THANH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2818 | |

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,587

Applicant(s)

ASANO ET AL.

Examiner

Michael t Tran

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-6 is/are allowed.
6) ☒ Claim(s) 7 and 10-12 is/are rejected.
7) ☒ Claim(s) 8,9 and 13 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

1. In response to the Communications dated June 26, 2003, claims 1-13 are active in this application.

Claim Objections

2. Claims 8, 9, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections – 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 7 and 10 are rejected under 35 U.S.C 102(b) as being anticipated by

Proebsting et al. [U.S. Patent #3,969,706].

With respect to claim 7, Proebsting et al. disclose a method of transferring a data bit out of a given cell of an array of memory cells as a logic value indicative signal to a latch circuit, comprising the steps of: applying a given memory cell logic value to a sense amplifier [SA] during a pre-charge condition prior to enabling operation of said SA; enabling said SA to provide an output signal indicative of the logic value of the given memory cell data substantially immediately after enablement; and passing said output signal to a latch circuit. See column 11, lines 45-68; and column 12, lines 1-15.

With respect to claim 10, Proebsting et al. disclose that the sense amplifier provides a latching type action of the output signal for a predetermined time after enablement. See column 11, lines 45-68; and column 12, lines 1-15.

5. Claim 11 is rejected under 35 U.S.C 102(b) as being anticipated by Proebsting et al. [U.S. Patent #3,969,706].

With respect to claim 11, Proebsting et al. disclose a method of providing a read-out path for high frequency pipelined memory, comprising the steps of: sensing the value of a memory cell in a latch type SA in a given clock cycle; holding the sensed value for at least a predetermined time; transferring the sensed value to a latch circuit; and outputting the transferred sensed value at a time subsequent to said given clock cycle. See column 11, lines 45-68; and column 12, lines 1-15.

6. Claim 12 is rejected under 35 U.S.C 102(b) as being anticipated by

Proebsting et al. [U.S. Patent #3,969,706].

With respect to claim 12, Proebsting et al. disclose an apparatus for providing a read-out path for high frequency pipelined memory, comprising: a latch type SA operable to sense the value of a memory cell in a given clock cycle; and a latch circuit interconnected to said latch type SA for receiving the sensed value from said SA and outputting the transferred sensed value at a time subsequent to said given clock cycle. See column 11, lines 45-68; and column 12, lines 1-15.

Allowable Subject Matter

7. Claims 1-6 are allowable over the prior art of record.
8. The following is an Examiner's statement of reasons for the indication of allowable subject matter: the prior art of records does not show (in addition to the other elements in the claim) the following:
 - ❖ Activating a given SA, of a plurality of associated SAs, with an enabling second signal to provide a given SA memory cell indicative third signal output; dynamically NORing a plurality of SA third signal outputs after each one of a series of cyclically occurring pre-charge periods.
 - ❖ A sense amplifier read-out path circuit for high frequency pipelined memory, comprising: a pair of latch type sense amplifiers defining corresponding respective outputs; read latch comprised of NAND logic; and a clocked switch disposed between the latch and the sense latches receiving the outputs and delivering one of the outputs to the read latch.

- ❖ Activating a given latch type SA of a plurality of latch type SAs, the given SA being associated with said given cell, with an enabling second signal to provide an output signal indicative of the logic value of said given cell; logically combining the outputs of all of said plurality of latch type SAs to dynamically pass the third signal output of the activated SA after each one of a series of cyclically occurring pre-charge periods.
- ❖ A latch type SA connected to each of said plurality of memory cells and operating to sense the logic value of the connected memory cell upon receipt of an enabling signal and subsequently providing an SA output signal indicative of said logic value; and a dynamic circuit interconnected between each of said latch type SAs and a latch circuit, the dynamic circuit being operable to pass the output signal of the last enabled SA to said latch circuit.
- ❖ The passing of the signal to a latch circuit is accomplished in a dynamic NOR; and the latch circuit is operationally a cross-coupled NAND.
- ❖ Wherein a plurality of cells is being read by a like plurality of SAs in consecutive clock cycle time periods and, wherein: the outputs of each of the plurality of SAs are logically combined in a dynamic manner before passing of the output signal to the latch circuit.
- ❖ An additional plurality of latch type SAs for sensing a like plurality of additional memory cells in individually distinct given clock cycles; and a dynamic logic circuit providing the interconnection between the plurality of SAs and the latch circuit.

Conclusion

9. When responding to the Office action, Applicants are advised to provide the Examiner with line and page numbers of the application and/or references cited to assist the Examiner in the prosecution of this case.

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael T. Tran whose telephone number is (571) 272-1795. The Examiner can normally be reached on Monday-Thursday from 7:30-6:00 P.M.

11. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1650.



Michael T. Tran
Art Unit 2818
June 26, 2004